ULTRA-HIGH DENSITY STORAGE DEVICE WITH ELECTRON BEAM STEERING

Abstract of the Disclosure

A storage device including many field emitters in close proximity to a storage medium, and a micromover, all in a partial vacuum. Each field emitter can generate an electron beam current. The storage medium has many storage areas on it, with each field emitter responsible for a number of storage areas. Also, each storage area can be in a number of different states to represent the information stored in that area. In storing information to the storage device, the power density of an electron beam current is increased to change the state of the storage area bombarded by the electron beam current. In reading information from the device, the power density of the electron beam current is reduced to generate a signal current from the storage area bombarded by the electron beam current. During reading, the power density is selected to be low enough so that no writing occurs. The magnitude of the signal current depends on the state of the storage area. The information stored in the storage area is read by measuring the magnitudes of the signal current. An electron beam steering mechanism deflects the electron beam current to different ones of the storage areas.